



Ash Creek Associates, Inc.

Environmental and Geotechnical Consultants

March 7, 2012

Mr. Dwight Leisle
Port of Portland
7200 NE Airport Way
Portland, Oregon 97218

Re: Proposed Storm Water Sampling
Terminal 2 Upland Facility
Portland, Oregon
1053-02

Dear Mr. Leisle:

This letter presents the proposed storm water sampling activities to support a Source Control Decision (SCD) for the Terminal 2 Upland Facility (the Facility) located in Portland, Oregon (Figures 1 and 2). This letter presents the methods, procedures, and chemical analyses for the above activities.

BACKGROUND

The Port prepared a *Preliminary Assessment* (PA) of Terminal 2 in August 2000. The Oregon Department of Environmental Quality (DEQ) provided comments on the PA in an email in March 2004. The DEQ comments primarily identified corrections needed to data presented in the PA and data that had not been included in the PA. The Port provided responses in an email communication on March 30, 2004. DEQ again followed up with additional questions and comments related to operations at Terminal 2. The Port provided responses to these questions in an email communication on March 9, 2005. After resolution of the PA questions, the DEQ requested that the Port conduct a storm water evaluation on the Terminal 2 upland facility according to DEQ's Joint Source Control Strategy (JSCS; DEQ/EPA, 2005). Ash Creek Associates (Ash Creek) prepared a *Storm Water Evaluation Work Plan* (dated August 21, 2007). A storm water sampling program and conveyance line cleanout were conducted and documented in the *Storm Water Evaluation Data Summary Report* (dated April 2009). To assist in the DEQ's preparation of an SCD, the Port prepared a Source Control Evaluation (SCE; dated December 1, 2011). DEQ indicated that additional data would be necessary to support a No Further Action (NFA)/SCD for the Facility and indicated that a "conditional" SCD could be provided that would be dependent upon additional 2012 National Pollutant Discharge Elimination System (NPDES) 1200-Z General Industrial Storm Water Discharge Permit data. As indicated in the SCE, the Port has an NPDES monitoring waiver for the period of July 1, 2009 through June 30, 2012. In order to support the NFA/SCD, the Port has agreed to provide additional storm water monitoring data.

PROPOSED SAMPLING ACTIVITIES

Preparatory Activities

The following activities were completed in preparation for the field work.

- **Health and Safety Plan (HASP).** Ash Creek prepared a HASP for its personnel involved with the project.
- **Work in Tenant Areas.** The work activities will be conducted in coordination with tenant schedules. Access will be coordinated with Port Marine Security (entire terminal) and Port Properties (U.S. Army Corps of Engineers [USACE] leasehold). The Port has indicated that the gate is not always staffed by Port security and Ash Creek will not be able to access the terminal when security is not on-site unless escorted by appropriate Port staff.

Storm Water Sampling

The sampling activities will be completed consistent with the methods and procedures in the historical NPDES monitoring program. Storm water samples will be obtained from manholes immediately before the discharge to Outfalls A and B, at the locations shown on Figure 3. These locations are the same compliance monitoring points used by the Port for the NPDES monitoring and for the historical storm water samples collected as part of the SCE process.

The unfiltered grab samples will be obtained in accordance with Standard Operating Procedure (SOP) 2.12 (Attachment A). A telescoping swing sampler with a pre-cleaned stainless steel cup will be used to collect the water samples, with the exception of oil and grease, which will be collected directly into the sample container. The water samples will be transferred into 1-gallon laboratory-decontaminated bulk sample containers for transport to the laboratory. The laboratory will transfer the composited samples into the respective sample containers for each analysis.

Four rounds of storm water samples will be collected with approximately two weeks between sampling events (as requested by the DEQ).

LABORATORY ANALYSIS

The samples collected from the above activities will be submitted for the following chemical analyses on a standard turnaround time (up to 10 business days).

NPDES analytes:

- Total suspended solids (TSS) by method SM2540 D;
- pH (field and laboratory measured);
- Oil and grease by EPA Method 1664A; and
- Total copper, lead, and zinc by EPA 6000/7000 series.

Additional analytes requested by the DEQ:

- Total arsenic, cadmium, and chromium by EPA 6000/7000 series;
- Total polychlorinated biphenyl (PCB) Aroclor 1260 by EPA Method 8082;
- Total polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270-SIM; and
- Total phthalates by EPA Method 525.2.



The laboratory-supplied method reporting limits (MRLs) and method detection limits (MDLs) are presented in Table 1 along with the JSCS screening levels (DEQ/EPA, 2005).

REPORTING

Following the fourth sampling event, a letter report will be prepared and will include the following:

- A discussion of the methods and procedures used;
- A tabular summary of the analytical results and JSCS screening;
- A comparison of the analytical results to the Portland Harbor-wide Heavy Industrial Sites concentration plots (Appendix E of the DEQ Guidance for Evaluating the Stormwater Pathway); and
- Analytical laboratory reports and a quality assurance review.

If you have any questions regarding these activities, please contact the undersigned at (503) 924-4704.

Sincerely,



Michael J. Pickering, R.G.
Senior Associate Hydrogeologist

REFERENCE

DEQ/EPA, 2005. Portland Harbor Joint Source Control Strategy – Final (Table 3-1 Updated July 16, 2007). December 2005.

ATTACHMENTS

Table 1 – Reporting Limits

Figure 1 – Facility Location Map

Figure 2 – Site Vicinity Map

Figure 3 – Storm Water Plan

Attachment A – Standard Operating Procedure 2.12

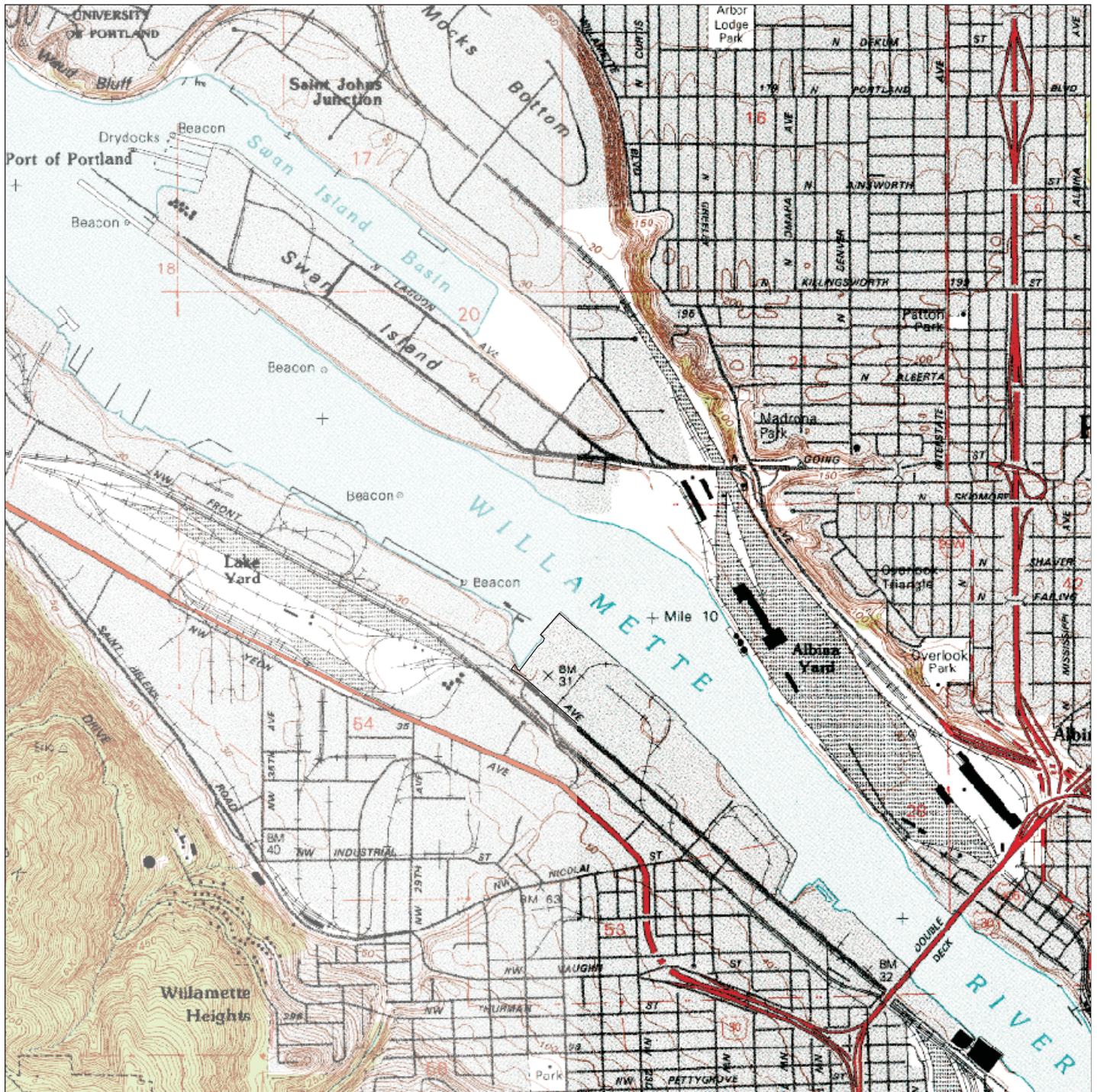


Table 1 – Reporting Limits
Terminal 2 Upland Facility
Portland, Oregon

Analyte	Units	MDL	MRL	JSCS
Total Suspended Solids (TSS) by method SM2540 D				
TSS	mg/L	1	1	--
Oil & Grease by EPA Method 1664A				
Oil & Grease	mg/L	1.4	5	--
Metals (EPA 6000/7000 Series Methods)				
Arsenic	ug/L	0.1	0.5	0.045
Cadmium	ug/L	0.005	0.02	0.094
Chromium	ug/L	0.04	0.2	100
Copper	ug/L	0.02	0.1	2.7
Lead	ug/L	0.005	0.02	0.54
Zinc	ug/L	0.2	0.5	36
Polychlorinated Biphenyls (EPA Method 8082)				
Aroclor 1260	ug/L	0.00096	0.005	0.034
Polycyclic Aromatic Hydrocarbons (EPA Method 8270-SIM)				
Acenaphthene	ug/L	0.36	3.4	0.2
Acenaphthylene	ug/L	0.37	3.4	0.2
Anthracene	ug/L	0.29	3.4	0.2
Benz(a)anthracene	ug/L	0.34	3.4	0.018
Benzo(a)pyrene	ug/L	0.41	3.4	0.018
Benzo(b)fluoranthene	ug/L	0.25	3.4	0.018
Benzo(g,h,i)perylene	ug/L	0.36	3.4	0.2
Benzo(k)fluoranthene	ug/L	0.41	3.4	0.018
Chrysene	ug/L	0.65	3.4	0.018
Dibenz(a,h)anthracene	ug/L	0.45	3.4	0.018
Fluoranthene	ug/L	0.46	3.4	0.2
Fluorene	ug/L	0.42	3.4	0.2
Indeno(1,2,3-cd)pyrene	ug/L	0.44	3.4	0.018
Naphthalene	ug/L	0.71	3.4	0.2
Pyrene	ug/L	0.78	3.4	0.2
Phthalates by EPA Method 525.2				
Benzyl butyl phthalate	ug/L	0.013	0.5	3
Bis(2-ethylhexyl) Phthalate	ug/L	0.04	0.6	2.2
Diethyl Phthalate	ug/L	0.015	0.5	3
Dimethyl Phthalate	ug/L	0.0073	0.5	3
Di-n-butyl Phthalate	ug/L	0.05	0.6	3
Di-n-octyl Phthalate	ug/L	0.0062	0.2	3

Notes:

1. -- = Not available or not applicable.
2. MDL = Method detection limit (MDL).
3. MRL = Method reporting limit (MRL).
4. JSCS = Screening levels from Portland Harbor Joint Source Control Strategy – Final (Table 3-1 Updated July 16, 2007). December 2005



Note: Base map prepared from USGS 7.5-minute quadrangle of Portland, OR, dated 1990 as provided by Topozone.

0 2,000 4,000
Approximate Scale in Feet



Facility Location Map

Proposed Storm Water Sampling
Terminal 2 Upland Facility
Portland, Oregon



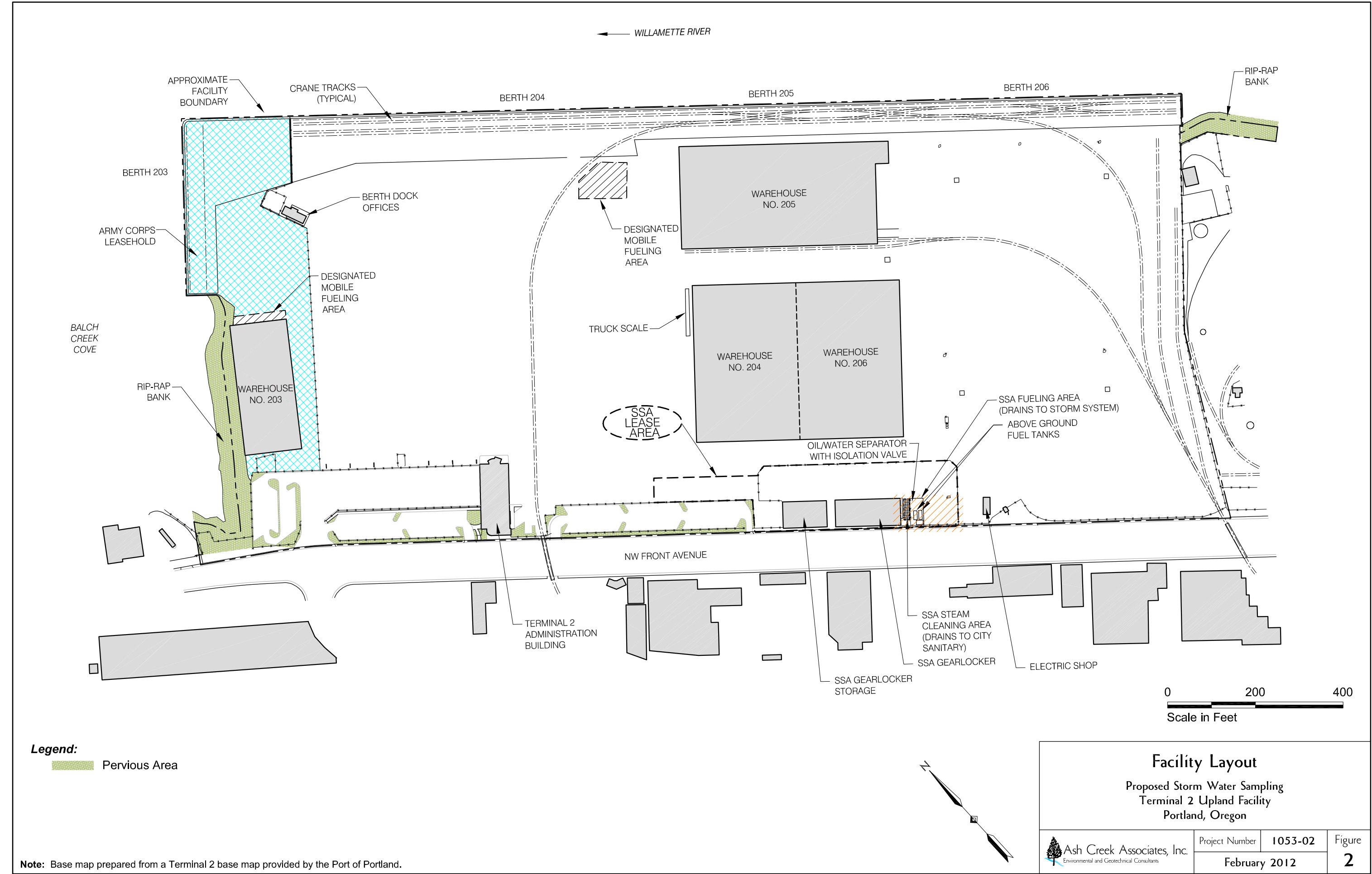
Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

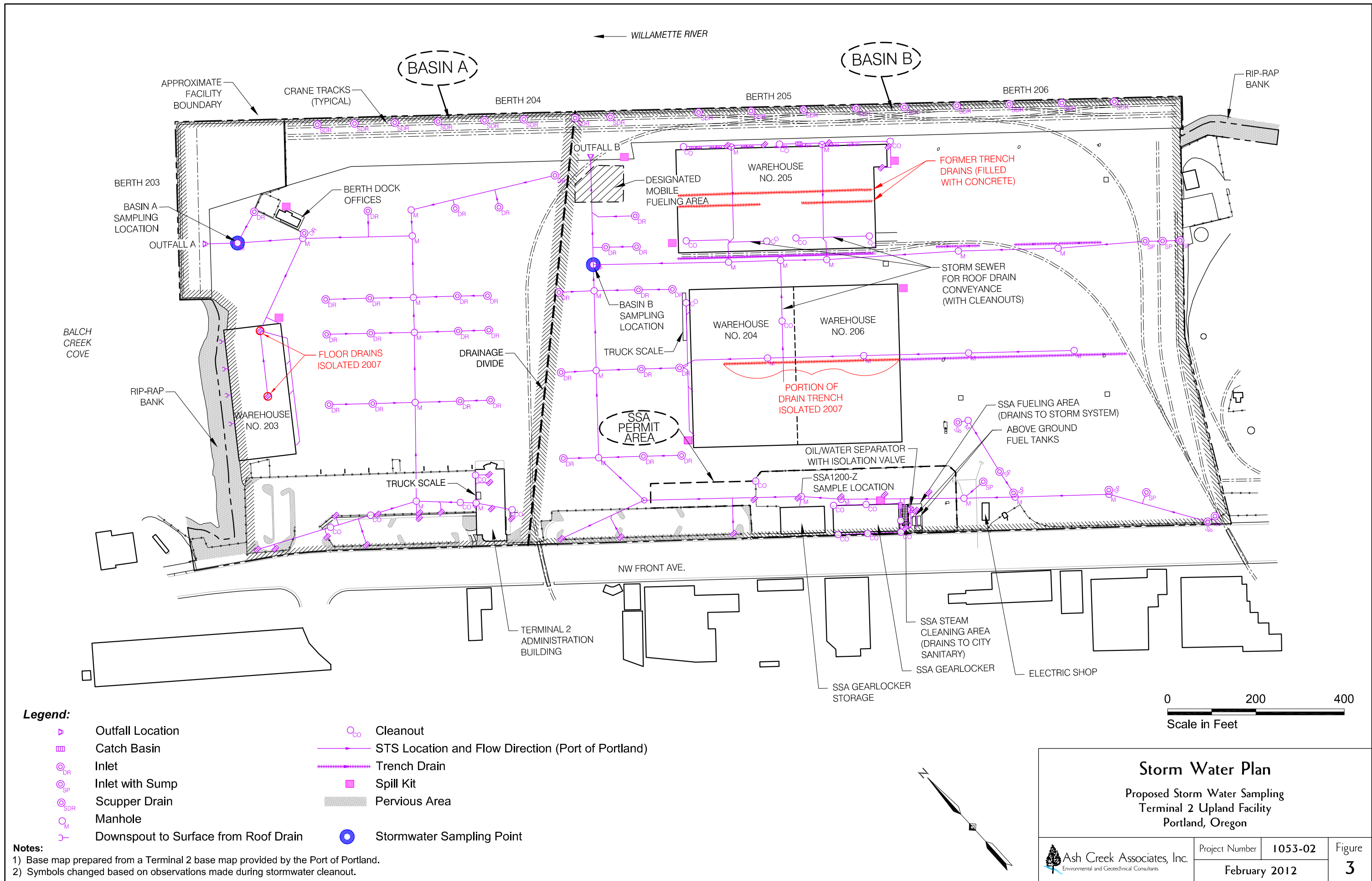
Project Number 1053-02

February 2012

Figure

1





Attachment A

Standard Operating Procedure 2.12

1. PURPOSE AND SCOPE

This Standard Operating Procedure (SOP) describes the methods used for obtaining grab-type water samples from storm drains, outfalls, flumes or surface waters for physical and/or chemical analysis. For a grab sample a discrete aliquot is collected representing a specific location at a given time. This SOP does not include collection of samples with an automated sampler. Various types of methods are used to collect grab water samples including peristaltic pumps, telescoping samplers, or directly filling laboratory-supplied sample containers. This procedure is applicable during all Ash Creek Associates (ACA) outfall water sampling activities.

2. EQUIPMENT AND MATERIALS

The following materials are necessary for this procedure:

- Telescoping swing sampler; and/or peristaltic pump and tubing.
- Laboratory-supplied sample containers
- Field documentation materials
- Decontamination materials
- Personal protective equipment (as required by Health and Safety Plan)

3. METHODOLOGY

Project-specific requirements will generally dictate the preferred type of sampling equipment used at a particular site. The following parameters should be considered: accessibility of sampling point, sampling depth, and flow rate. Analytical testing requirements will indicate sample volume requirements that also will influence the selection of the appropriate type of sampling method. The project sampling plan should define the specific requirements for collection of outfall water samples at a particular site.

Collection of Samples

- Record weather conditions at the time of sampling and last known rain fall event(s). Record and describe site conditions upon arrival and during sampling..
- Collect samples using the "Clean Hands/Dirty Hands" sampling technique. Operations involving direct contact with the sample bottle, sample bottle lid, sample suction tubing, and the transfer of the sample from the sample collection device to the sample bottle are handled by "clean hands". "Dirty hands" is responsible for preparation of the sampler (except the sample container itself), operation of any machinery, and for all activities that do not involve handling items that have direct contact with the sample.
- The water sample can be collected directly by dipping a new laboratory supplied container (i.e. polyethylene, Teflon, or glass) into the water (just beneath the water surface) or under the flow path and filling. The liquid is then transferred to a laboratory supplied sample container. Be careful not to touch the sides of the vault, manhole, or outfall pipe.
- A telescoping swing sampler can be used if an extension is necessary to access the sample point. Attach a new laboratory supplied container (i.e. polyethylene, Teflon, or glass) to the sampler. This transfer device is used to transfer liquid from the sampling point to a sample bottle. Avoid using metal transfer devices for trace-metal analysis or plastic devices for sampling trace organics.
- A peristaltic pump with disposable tubing can be used to collect a water sample from a manhole. The downhole tubing can be attached to a telescoping sampling pole to provide better control. Lower the tubing downstream of any standing water and take care to avoid stirring up the sediment.